```
      661 QGSTGAAGPRLFTIHLIDANTDNLRKAHTCFNRIDIPPYESYEKLYEKLLTAVEETCGFA 720

      722 VE 723
          ||
      721 VE 722


JLT 4
13384
  AAW13384 standard; protein; 748 AA.

  AAW13384;

  10-JUL-1997  (first entry)

  Human protein ubiquitin ligase pub1.

  Protein ubiquitin ligase; pub1; cdc25 phosphatase; CDK kinase; p53;
  cell cycle; transgenic animal.

  Homo sapiens.

  WO9712962-A1.

  10-APR-1997.

  04-OCT-1996;   96WO-US015930.

  04-OCT-1995;   95US-00539205.

  (COLD-) COLD SPRING HARBOR LAB.

  Beach D,  Caligiuri M,  Nefsky B;

  WPI; 1997-226206/20.
  N-PSDB; AAT47040.

  Human and Saccharomyces pombe protein ubiquitin ligase(s) - involved in
  cdc25 phosphatase and p53 ubiquitination, and regulate cell growth and
  proliferation.

  Claim 1; Page 74-77; 108pp; English.

  Human protein ubiquitin ligases pub1 (AAW13384), pub2 (AAW13385) and pub3
  (AAW13386) are homologues of fission yeast pub1 (AAW13387) and were
  identified from cDNA clones (AAT47040-42) obtd. e.g. from a keratinocyte
  cDNA library. Pub polypeptides can be produced in transfected host cells.
  They can control the steady state level of cdc25 phosphatase, the degree
  of CDK kinase (e.g. cdc2) dephosphorylation and the steady state level of
  p53 (controlling the degree of cell cycle regulation of p53). They can
  regulate cell or tissue differentiation, or cell growth or proliferation
  by affecting other proteins, can be a specific (ant)agonist of wild- type
  protein function and may be used as immunogens to elicit a specific
  immune residue

  Sequence 748 AA;

  Query Match             77.3%;  Score 3001;  DB 2;  Length 748;
  Best Local Similarity   74.6%;  Pred. No. 1.5e-285;
  Matches  565;  Conservative   63;  Mismatches   71;  Indels   58;  Gaps    8;

Qy          5 IKIRLTVLCAKNLAKKDFFRLPDPFAKIVVDGSGQCHSTDTVKNTLDPKWNQHYDLYVGK 64
              :|:|||||||||| ||||||||||||:|||||||||||||||||||||||||||:|| 
Db         12 VKLRLTVLCAKNLVKKDFFRLPDPFAKVVVDGSGQCHSTDTVKNTLDPKWNQHYDLYIGK 71

Qy         65 TDSITISVWNHKKIHKKQGAGFLGCVRLLSNAISRLKDTGYQRLDLCKLNPSDTDAVRGQ 124
              :||:|||||||||||||||||||||||||||:|||||||||||||| |:| | ||||
Db         72 SDSVTISVWNHKKIHKKQGAGFLGCVRLLSNAINRLKDTGYQRLDLCKLGPNDNDTVRGQ 131

Qy        125 IVVSLQTRDRIGTGGSVVDCRGLLENE------------GTVY----------------- 155
              ||||||:|||||||| |||| | :|:            | :
Db        132 IVVSLQSRDRIGTGGQVVDCSRLFDNDLPDGWEERRTASGRIQYLNHITRTTQWERPTRP 191

Qy        156 --EDSGPGRPLSCFMEEPAPYTDSTGAAAGGGNCRFVESPSQDQRLQAQRLRNPDVRGSL 213
                | | |||||||::|  | : : || |                | | ||  :|:|:   |  :
Db        192 ASEYSSPGRPLSCFVDENTPISGTNGATCG---------QSSDPRLAERRVRSQRHRNYM 242

Qy        214 QTPQNRPHGHQSPELPEGYEQRTTVQGQVYFLHTQTGVSTWHDPRIPRDLNSVNCDELGP 273
                  :| | |  |:|||||||||| ||||||||||||||||||:||||:::||:||||
Db        243 ----SRTHLHTPPDLPEGYEQRTTQQGQVYFLHTQTGVSTWHDPRVPRDLSNINCEELGP 298

Qy        274 LPPGWEVRSTVSGRIYFVDHNNRTTQFTDPR----LHHIMNHQCQLKEPSQPLPLPSEGS 329
              ||||||:|:| :||:|||||||||||||||    || ::| | |||:  |  :   |
Db        299 LPPGWEIRNTATGRVYFVDHNNRTTQFTDPRLSANLHLVLNRQNQLKDQQQQQVV----S 354

Qy        330 L---EDEELPAQRYERDLVQKLKVLRHELSLQQPQAGHCRIEVSREEIFEESYRQIMKMR 386
              |   : | |   ||:|||||||:|| ||| ||||||||||||||||||||:||||
Db        355 LCPDDTECLTVPRYKRDLVQKLKILRQELSQQQFQAGHCRIEVSREEIFEESYRQVMKMR 414

Qy        387 PKDLKKRLMVKFRGEEGLDYGGVAREWLYLLCHEMLNPYYGLFQYSTDNIYMLQINPDSS 446
              |||| ||||:|||||||||||||||||||| ||||||||||||| |:|| |||||||:
Db        415 PKDLWKRLMIKFRGEEGLDYGGVAREWLYLLSHEMLNPYYGLFQYSRDDIYTLQINPDSA 474

Qy        447 INPDHLSYFHFVGRIMGLAVFHGHYINGGFTVPFYKQLLGKPIQLSDLESVDPELHKSLV 506
              :||:|||||||||||:|||||||:||||:|||||||| | | |:| |||:|| |||
Db        475 VNPEHLSYFHFVGRIMGMAVFHGHYIDGGFTLPFYKQLLGKSITLDDMELVDPDLHNSLV 534

Qy        507 WILENDITPVLDHTFCVEHNAFGRILQHELKPNGRNVPVTEENKKEYVRLYVNWRFMRGI 566
              |||||||| ||||||||||||:| |:|||||||:::|| ||||||||||||||||:|||
Db        535 WILENDITGVLDHTFCVEHNAYGEIIQHELKPNGKSIPVNEENKKEYVRLYVNWRFLRGI 594

Qy        567 EAQFLALQKGFNELIPQHLLKPFDQKELELIIGGLDKIDLNDWKSNTRLKHCVADSNIVR 626
              |||||||||||||:||||||| ||:|||||| || |||:|||| |||||||  |||||:
Db        595 EAQFLALQKGFNEVIPQHLLKTFDEKELELIICGLGKIDVNDWKVNTRLKHCTPDSNIVK 654

Qy        627 WFWQAVETFDEERRARLLQFVTGSTRVPLQGFKALQGSTGAAGPRLFTIHLIDANTDNLP 686
              |||:||| |||||||||||||||:|||||||||    |||||||||| ||| |:|||
Db        655 WFWKAVEFFDEERRARLLQFVTGSSRVPLQGFKALQ---GAAGPRLFTIHQIDACTNNLP 711

Qy        687 KAHTCFNRIDIPPYESYEKLYEKLLTAVEETCGFAVE 723
              |||||||||||||||||||||||||:|||||||||
Db        712 KAHTCFNRIDIPPYESYEKLYEKLLTAIEETCGFAVE 748


RESULT 5
AAB31477
ID   AAB31477 standard; protein; 748 AA.
XX
AC   AAB31477;
XX
DT   20-APR-2001  (first entry)
XX
DE   Amino acid sequence of a human Smurf2 polypeptide.
XX
KW   Smurf1; Smurf2; Smad signal transduction; bone morphogenic protein; BMP;
KW   transforming growth factor-beta; human; TGF-beta; chondrogenesis;
KW   osteogenesis; blood differentiation; cartilage formation; hair growth;
KW   neural tube patterning; retinal development; heart induction;
KW   morphogenesis; tooth formation; gamete formation.
XX
OS   Homo sapiens.
XX
PN   WO200077168-A2.
XX
PD   21-DEC-2000.
XX
PF   12-JUN-2000; 2000WO-US016250.
XX
PR   11-JUN-1999;   99US-0138969P.
XX
PA   (UYNY ) UNIV NEW YORK STATE RES FOUND.
PA   (HSCR-) HSC RES & DEV LP.
XX
PI   Thomsen GH,  Wrana J;
XX
DR   WPI; 2001-071267/08.
```

Applicant

```
CC   development, heart induction and morphogenesis, hair growth, tooth
CC   formation, gamete formation and a wide variety of tissue and organ
CC   formation processes, and hinder the regeneration, growth, maintenance,
CC   etc., of bone and other tissues that are dependent on the BMP pathway.
CC   The polypeptide is useful for screening for various drugs and/or
CC   antibodies that can either enhance the BMP pathway, or inhibit it
XX
SQ   Sequence 748 AA;

  Query Match             100.0%;  Score 4038;  DB 4;  Length 748;
  Best Local Similarity   100.0%;  Pred. No. 0;
  Matches  748;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 MSNPGRRRNGPVKLRLTVLCAKNLVKKDFFRLPDPFAKVVVDGSGQCHSTDTVKNTLDPK 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 MSNPGRRRNGPVKLRLTVLCAKNLVKKDFFRLPDPFAKVVVDGSGQCHSTDTVKNTLDPK 60

Qy         61 WNQHYDLYIGKSDSVTISVWNHKKIHKKQGAGFLGCVRLLSNAINRLKDTGYQRLDLCKL 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         61 WNQHYDLYIGKSDSVTISVWNHKKIHKKQGAGFLGCVRLLSNAINRLKDTGYQRLDLCKL 120

Qy        121 GPNDNDTVRGQIVVSLQSRDRIGTGGQVVDCSRLFDNDLPDGWEERRTASGRIQYLNHIT 180
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        121 GPNDNDTVRGQIVVSLQSRDRIGTGGQVVDCSRLFDNDLPDGWEERRTASGRIQYLNHIT 180

Qy        181 RTTQWERPTRPASEYSSPGRPLSCFVDENTPISGTNGATCGQSSDPRLAERRVRSQRHRN 240
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        181 RTTQWERPTRPASEYSSPGRPLSCFVDENTPISGTNGATCGQSSDPRLAERRVRSQRHRN 240

Qy        241 YMSRTHLHTPPDLPEGYEQRTTQQGQVYFLHTQTGVSTWHDPRVPRDLSNINCEELGPLP 300
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        241 YMSRTHLHTPPDLPEGYEQRTTQQGQVYFLHTQTGVSTWHDPRVPRDLSNINCEELGPLP 300

Qy        301 PGWEIRNTATGRVYFVDHNNRTTQFTDPRLSANLHLVLNRQNQLKDQQQQQVVSLCPDDT 360
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        301 PGWEIRNTATGRVYFVDHNNRTTQFTDPRLSANLHLVLNRQNQLKDQQQQQVVSLCPDDT 360

Qy        361 ECLTVPRYKRDLVQKLKILRQELSQQQPQAGHCRIEVSREEIFEESYRQVMKMRPKDLWK 420
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        361 ECLTVPRYKRDLVQKLKILRQELSQQQPQAGHCRIEVSREEIFEESYRQVMKMRPKDLWK 420

Qy        421 RLMIKFRGEEGLDYGGVAREWLYLLSHEMLNPYYGLFQYSRDDIYTLQINPDSAVNPEHL 480
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        421 RLMIKFRGEEGLDYGGVAREWLYLLSHEMLNPYYGLFQYSRDDIYTLQINPDSAVNPEHL 480

Qy        481 SYFHFVGRIMGMAVFHGHYIDGGFTLPFYKQLLGKSITLDDMELVDPDLHNSLVWILEND 540
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        481 SYFHFVGRIMGMAVFHGHYIDGGFTLPFYKQLLGKSITLDDMELVDPDLHNSLVWILEND 540

Qy        541 ITGVLDHTFCVEHNAYGEIIQHELKPNGKSIPVNEENKKEYVRLYVNWRFLRGIEAQFLA 600
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        541 ITGVLDHTFCVEHNAYGEIIQHELKPNGKSIPVNEENKKEYVRLYVNWRFLRGIEAQFLA 600

Qy        601 LQKGFNEVIPQHLLKTFDEKELELIICGLGKIDVNDWKVNTRLKHCTPDSNIVKWFWKAV 660
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        601 LQKGFNEVIPQHLLKTFDEKELELIICGLGKIDVNDWKVNTRLKHCTPDSNIVKWFWKAV 660

Qy        661 EFFDEERRARLLQFVTGSSRVPLQGFKALQGAAGPRLFTIHQIDACTNNLPKAHTCFNRI 720
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        661 EFFDEERRARLLQFVTGSSRVPLQGFKALQGAAGPRLFTIHQIDACTNNLPKAHTCFNRI 720

Qy        721 DIPPYESYEKLYEKLLTAIEETCGFAVE 748
              |||||||||||||||||||||||||||||
Db        721 DIPPYESYEKLYEKLLTAIEETCGFAVE 748


RESULT 2
AAW13384
ID   AAW13384 standard; protein; 748 AA.
XX
AC   AAW13384;
XX
DT   10-JUL-1997  (first entry)
XX
DE   Human protein ubiquitin ligase pub1.
XX
KW   Protein ubiquitin ligase; pub1; cdc25 phosphatase; CDK kinase; p53;
KW   cell cycle; transgenic animal.
XX
OS   Homo sapiens.
XX
PN   WO9712962-A1.
XX
PD   10-APR-1997.
XX
PF   04-OCT-1996;   96WO-US015930.
XX
PR   04-OCT-1995;   95US-00539205.
XX
PA   (COLD-) COLD SPRING HARBOR LAB.
XX
PI   Beach D,  Caligiuri M,  Nefsky B;
XX
DR   WPI; 1997-226206/20.
DR   N-PSDB; AAT47040.
XX
PT   Human and Saccharomyces pombe protein ubiquitin ligase(s) - involved in
PT   cdc25 phosphatase and p53 ubiquitination, and regulate cell growth and
PT   proliferation.
XX
PS   Claim 1; Page 74-77; 108pp; English.
XX
CC   Human protein ubiquitin ligases pub1 (AAW13384), pub2 (AAW13385) and pub3
CC   (AAW13386) are homologues of fission yeast pub1 (AAW13387) and were
CC   identified from cDNA clones (AAT47040-42) obtd. e.g. from a keratinocyte
CC   cDNA library. Pub polypeptides can be produced in transfected host cells.
CC   They can control the steady state level of cdc25 phosphatase, the degree
CC   of CDK kinase (e.g. cdc2) dephosphorylation and the steady state level of
CC   p53 (controlling the degree of cell cycle regulation of p53). They can
CC   regulate cell or tissue differentiation, or cell growth or proliferation
CC   by affecting other proteins, can be a specific (ant)agonist of wild- type
CC   protein function and may be used as immunogens to elicit a specific
CC   immune residue
XX
SQ   Sequence 748 AA;

  Query Match             99.8%;  Score 4031;  DB 2;  Length 748;
  Best Local Similarity   99.9%;  Pred. No. 0;
  Matches  747;  Conservative    0;  Mismatches    1;  Indels    0;  Gaps    0;

Qy          1 MSNPGRRRNGPVKLRLTVLCAKNLVKKDFFRLPDPFAKVVVDGSGQCHSTDTVKNTLDPK 60
              ||||| |||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 MSNPGGRRNGPVKLRLTVLCAKNLVKKDFFRLPDPFAKVVVDGSGQCHSTDTVKNTLDPK 60

Qy         61 WNQHYDLYIGKSDSVTISVWNHKKIHKKQGAGFLGCVRLLSNAINRLKDTGYQRLDLCKL 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         61 WNQHYDLYIGKSDSVTISVWNHKKIHKKQGAGFLGCVRLLSNAINRLKDTGYQRLDLCKL 120

Qy        121 GPNDNDTVRGQIVVSLQSRDRIGTGGQVVDCSRLFDNDLPDGWEERRTASGRIQYLNHIT 180
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        121 GPNDNDTVRGQIVVSLQSRDRIGTGGQVVDCSRLFDNDLPDGWEERRTASGRIQYLNHIT 180

Qy        181 RTTQWERPTRPASEYSSPGRPLSCFVDENTPISGTNGATCGQSSDPRLAERRVRSQRHRN 240
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        181 RTTQWERPTRPASEYSSPGRPLSCFVDENTPISGTNGATCGQSSDPRLAERRVRSQRHRN 240

Qy        241 YMSRTHLHTPPDLPEGYEQRTTQQGQVYFLHTQTGVSTWHDPRVPRDLSNINCEELGPLP 300
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        241 YMSRTHLHTPPDLPEGYEQRTTQQGQVYFLHTQTGVSTWHDPRVPRDLSNINCEELGPLP 300

Qy        301 PGWEIRNTATGRVYFVDHNNRTTQFTDPRLSANLHLVLNRQNQLKDQQQQQVVSLCPDDT 360
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        301 PGWEIRNTATGRVYFVDHNNRTTQFTDPRLSANLHLVLNRQNQLKDQQQQQVVSLCPDDT 360

Qy        361 ECLTVPRYKRDLVQKLKILRQELSQQQPQAGHCRIEVSREEIFEESYRQVMKMRPKDLWK 420
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
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Db        361 ECLTVPRYKRDLVQKLKILRQELSQQQPQAGHCRIEVSREEIFEESYRQVMKMRPKDLWK 420

Qy        421 RLMIKFRGEEGLDYGGVAREWLYLLSHEMLNPYYGLFQYSRDDIYTLQINPDSAVNPEHL 480
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        421 RLMIKFRGEEGLDYGGVAREWLYLLSHEMLNPYYGLFQYSRDDIYTLQINPDSAVNPEHL 480

Qy        481 SYFHFVGRIMGMAVFHGHYIDGGFTLPFYKQLLGKSITLDDMELVDPDLHNSLVWILEND 540
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        481 SYFHFVGRIMGMAVFHGHYIDGGFTLPFYKQLLGKSITLDDMELVDPDLHNSLVWILEND 540

Qy        541 ITGVLDHTFCVEHNAYGEIIQHELKPNGKSIPVNEENKKEYVRLYVNWRFLRGIEAQFLA 600
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        541 ITGVLDHTFCVEHNAYGEIIQHELKPNGKSIPVNEENKKEYVRLYVNWRFLRGIEAQFLA 600

Qy        601 LQKGFNEVIPQHLLKTFDEKELELIICGLGKIDVNDWKVNTRLKHCTPDSNIVKWFWKAV 660
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        601 LQKGFNEVIPQHLLKTFDEKELELIICGLGKIDVNDWKVNTRLKHCTPDSNIVKWFWKAV 660

Qy        661 EFFDEERRARLLQFVTGSSRVPLQGFKALQGAAGPRLFTIHQIDACTNNLPKAHTCFNRI 720
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        661 EFFDEERRARLLQFVTGSSRVPLQGFKALQGAAGPRLFTIHQIDACTNNLPKAHTCFNRI 720

Qy        721 DIPPYESYEKLYEKLLTAIEETCGFAVE 748
              ||||||||||||||||||||||||||||
Db        721 DIPPYESYEKLYEKLLTAIEETCGFAVE 748
```

RESULT 3
AAU19610
ID AAU19610 standard; protein; 804 AA.
XX
AC AAU19610;
XX
DT 04-DEC-2001 (first entry)
XX
DE Human diagnostic and therapeutic polypeptide (DITHP) #196.
XX
KW Human; receptor; diagnostic; therapeutic; gene therapy; vaccine;
KW cell proliferative disorder; Crohn's disease; lymphoma; leukaemia;
KW acquired immune deficiency syndrome; AIDS; autoimmune disorder;
KW respiratory disorder.
XX
OS Homo sapiens.
XX
PN WO200162927-A2.
XX
PD 30-AUG-2001.
XX
PF 21-FEB-2001; 2001WO-US006059.
XX
PR 24-FEB-2000; 2000US-0184693P.
PR 24-FEB-2000; 2000US-0184697P.
PR 24-FEB-2000; 2000US-0184698P.
PR 24-FEB-2000; 2000US-0184768P.
PR 24-FEB-2000; 2000US-0184769P.
PR 24-FEB-2000; 2000US-0184770P.
PR 24-FEB-2000; 2000US-0184771P.
PR 24-FEB-2000; 2000US-0184772P.
PR 24-FEB-2000; 2000US-0184773P.
PR 24-FEB-2000; 2000US-0184774P.
PR 24-FEB-2000; 2000US-0184776P.
PR 24-FEB-2000; 2000US-0184777P.
PR 24-FEB-2000; 2000US-0184797P.
PR 24-FEB-2000; 2000US-0184813P.
PR 24-FEB-2000; 2000US-0184837P.
PR 24-FEB-2000; 2000US-0184841P.
PR 24-FEB-2000; 2000US-0185213P.
PR 24-FEB-2000; 2000US-0185216P.
PR 12-MAY-2000; 2000US-0203785P.
PR 15-MAY-2000; 2000US-0204226P.
PR 16-MAY-2000; 2000US-0204525P.
PR 16-MAY-2000; 2000US-0204821P.
PR 16-MAY-2000; 2000US-0204908P.
PR 16-MAY-2000; 2000US-0205232P.
PR 17-MAY-2000; 2000US-0204815P.
PR 17-MAY-2000; 2000US-0204863P.
PR 17-MAY-2000; 2000US-0205221P.
PR 17-MAY-2000; 2000US-0205285P.
PR 17-MAY-2000; 2000US-0205286P.
PR 17-MAY-2000; 2000US-0205287P.
PR 17-MAY-2000; 2000US-0205323P.
PR 17-MAY-2000; 2000US-0205324P.
XX
PA (INCY-) INCYTE GENOMICS INC.
XX
PI Panzer SR, Spiro PA, Banville SC, Shah P, Chalup MS, Chang SC;
PI Chen A, D'sa SA, Amshey S, Dahl CR, Dam TC, Daniels SE, Dufour GE;
PI Flores V, Fong WT, Greenawalt LB, Hillman JL, Jones AL, Liu TF;
PI Roseberry AM, Rosen BH, Russo FD, Stockdreher TK, Daffo A;
PI Wright RJ, Yap PE, Yu JY, Bradley DL, Bratcher SR, Chen W;
PI Cohen HJ, Hodgson DM, Lincoln SE, Jackson S;
XX
DR WPI; 2001-502867/55.
DR N-PSDB; AAS31181.
XX
PT Polynucleotides encoding diagnostic and therapeutic proteins, e.g.
PT enzymes, hormones and receptors, useful in diagnostics and therapeutics.
XX
PS Claim 27; Page 512-514; 522pp; English.
XX
CC The invention relates to polynucleotides (I) encoding diagnostic and
CC therapeutic (DITHP) polypeptides (II), which include e.g. enzymes, and
CC proteins involved in growth and development and receptors. (I) and (II)
CC may be used in the prevention, diagnosis and treatment of diseases
CC associated with inappropriate DITHP expression. For example, (I) and (II)
CC may be used to treat disorders associated with decreased polypeptide
CC expression by rectifying mutations or deletions in a patient's genome,
CC that affect the activity of the DITHPs, by expressing inactive proteins
CC or supplementing the patient's own production of them. (I) and (II) may
CC be used to treat diseases, for example, cell proliferative disorder,
CC Crohn's disease, acquired immune deficiency syndrome (AIDS), lymphoma,
CC leukaemia, autoimmune disorders, and respiratory disorders. Additionally,
CC (I) may be used to produce the DITHPs, by inserting the nucleic acids
CC into a host cell and culturing the cell to express the protein. (I) and
CC its complementary sequences may also be used as DNA probes in diagnostic
CC assays to detect and quantitate the presence of similar nucleic acids in
CC samples, and therefore which patients may be in need of restorative
CC therapy. (II) may also be used as antigens in the production of
CC antibodies against DITHPs and in assays to identify modulators of DITHP
CC expression and activity. The anti-DITHP antibodies and antagonists may
CC also be used to down regulate expression and activity. The anti-DITHP
CC antibodies may also be used as diagnostic agents for detecting the
CC presence of DITHPs in samples (e.g. by enzyme linked immunosorbant assay
CC (ELISA)). AAU19415-AAU19625 represent human diagnostic and therapeutic
CC (DITHP) polypeptides of the invention
XX
SQ Sequence 804 AA;

```
  Query Match             99.7%;  Score 4027;  DB 4;  Length 804;
  Best Local Similarity   99.7%;  Pred. No. 0;
  Matches  746;  Conservative    0;  Mismatches    2;  Indels    0;  Gaps    0;

Qy          1 MSNPGRRRNGPVKLRLTVLCAKNLVKKDFFRLPDPFAKVVVDGSGQCHSTDTVKNTLDPK 60
              ||||| |||||||| ||||||||||||||||||||||||||||||||||||||||||||||
Db         57 MSNPGSRRNGPVKLHLTVLCAKNLVKKDFFRLPDPFAKVVVDGSGQCHSTDTVKNTLDPK 116

Qy         61 WNQHYDLYIGKSDSVTISVWNHKKIHKKQGAGFLGCVRLLSNAINRLKDTGYQRLDLCKL 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        117 WNQHYDLYIGKSDSVTISVWNHKKIHKKQGAGFLGCVRLLSNAINRLKDTGYQRLDLCKL 176

Qy        121 GPNDNDTVRGQIVVSLQSRDRIGTGGQVVDCSRLFDNDLPDGWEERRTASGRIQYLNHIT 180
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        177 GPNDNDTVRGQIVVSLQSRDRIGTGGQVVDCSRLFDNDLPDGWEERRTASGRIQYLNHIT 236

Qy        181 RTTQWERPTRPASEYSSPGRPLSCFVDENTPISGTNGATCGQSSDPRLAERRVRSQRHRN 240
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